THE AMERICAN ARCHITECT

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DETAIL OF WROUGHT IRON BALCONY RAIL, HOTEL DE VILLE, NANCY

The Crafts of Iron and Bronze

THERE are many men who pride themselves on an appreciation of art. Among these are the "Amateur of Art," the man who affects the society of artists and who believes he has unerring judgment, and also that ludicrous (to artists) individual who boastfully states he "knows nothing about art but knows what he likes." With this last we shall also find the man of ample means who carefully sends his thousand-dollar fur coat to cold storage on the advent of spring and carelessly hangs a two-thousand-dollar picture on his wall, leaving it to suffer from neglect for an indefinite period. The attitude of the general public, ignorant of what constitutes good art and without knowledge of the temperamental characteristics of men who create it, has a depressing influence on the progress of art towards its legitimate goal. In no branch of artistic development has it a greater or more deterrent influence than on the art of the artisan or master craftsman.

Let us take, for example, the two arts of bronze and iron, the oldest of the artistic interpretations of metal. From prehistoric times these two metals have been used for decorative purposes. The charm of ancient, medieval and Renaissance bronze and iron has always been due to the painstaking artistic and technical care given to each separate piece. Among the ancients every example in these metals represented the artistic skill of the man who made it. The artist worked *con amore*, and put all that he had of knowledge into his result. If skillful, he lacked no rich patrons. His place as an artist was as firmly fixed as that of the artist painter and artist sculptor.

In bronze and iron, as in every other craft, there have been periods marked by the rise and fall of artistic performance. Periods of decadence have been followed by the most successful revivals of these crafts. Many reasons have been assigned for these conditions, the most probable being that these master artists, like poets, were "born, not made," and their development was greater in some periods than in others.

The history of the development of the arts of bronze and iron in this country has been marked by the same wave-like rise and fall that characterized

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BRONZE ROMAN VESSEL
(FROM THE VATICAN MUSEUM)

it in Europe. Bronze is attaining its highest expression as an art. Iron had its best development during the periods of the sixteenth and seventeenth centuries. Both stand imperiled as to their future advancement for the reason that the very men who should be, and perhaps are, most interested in their development unconsciously retard it.

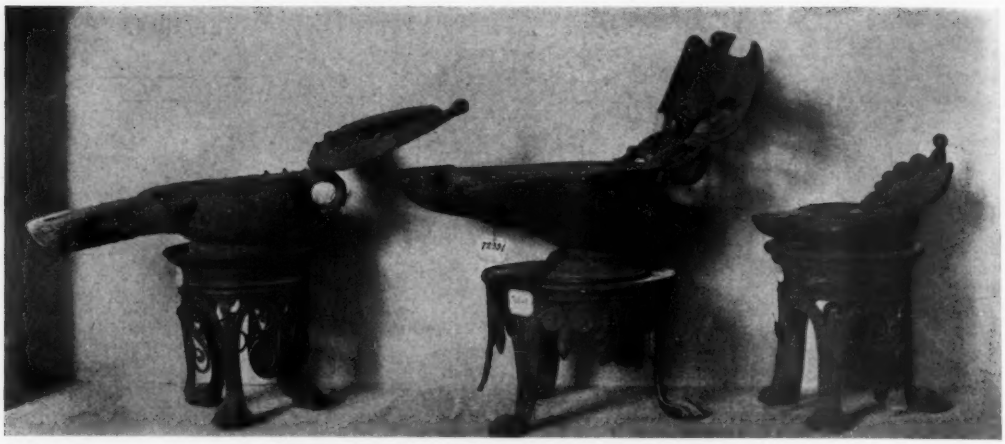
The greatest mistake is in the confusion of the art of the bronze and wrought iron worker with the labor of the mechanic. This error is unmistakable and is often that of men who, both by education and training, should be able to see the very broad distinction that exists. We have in this country workers in bronze and iron who in artistic ability excel many of those of an age when these crafts were believed to have reached their highest perfection. They only need opportunity, unhampered by the tendency toward commercialization of their art, to demonstrate this beyond dispute. But bronze and iron are in their artistic forms expensive, and, like anything of equal excellence, cannot compete in price with a shop-made substitute.

When an architect has completed his specifications and is prepared to ask for bids he varies little, if any, the method he adopts to secure such work of the artist craftsman as is contemplated from that of the grosser labor and material that goes into the fabric of his structure. There is consciously or unconsciously the same tendency to seek the "lowest bidder" and to accept some so-called "equal to" substitute that will in a sense serve the purpose. It is fair to assume that an art that is compelled to go into the open field of price competition cannot freely advance, and that the craftsman, realizing the tendency to commercialize his art, will soon become indifferent. Like other artists to whom appreciation is of great incentive value, the fine edge of their ability will be dulled. This attitude of architects, who as artists practise the oldest of all the arts, is to those having the best interests of these crafts at heart an incomprehensible thing. The opportunity to correct these conditions and to place the highest form of craftsmanship on the elevated plane to which it belongs lies in a large measure with architects.

The greatest influence for the advancement of craftsmanship as applied to Building Art doubtless rests with the Government. It is in the large monumental buildings erected at Government expense that architecture and its allied arts find opportunity for the greatest development. But it is just here that we are confronted by a condition that is having a retardant effect on everything that makes for the finer side of material development in this country. It is the debasing element of politics, the tendency to make a "job" of every transaction, from

DETAIL OF WROUGHT-IRON FENCE, NANCY

DETAIL OF BRONZE STAIRWAY, CHATEAU DE CHANTILLY



BRONZE LAMPS AND STANDS FROM POMPEII
NATIONAL MUSEUM, NAPLES

the smallest to the largest operation. A system that permits a "syndicate" to secure the contract for a building of which it never executes any part and the subletting and resubletting of different divisions, results in each case, from the largest contractor to the smallest, in the "pinching and pruning" of costs to make the biggest possible profits. It is between these upper and nether mill-stones that the craftsman is ground. He is compelled to resort to methods to forestall possible loss that sets the work of the artisan back for years.

These conditions of competition where the iron and bronze workers strive for contracts not only neutralize their better efforts but bring them into strong opposition with many other decorative products.

This rivalry leads to no good purpose. No art or craft can prosper while it seeks to exploit its own excellence and decries that of some other branch of craftsmanship. The tendency to deprecate the value of certain materials is the example often set by such influential mediums as the various trade papers.

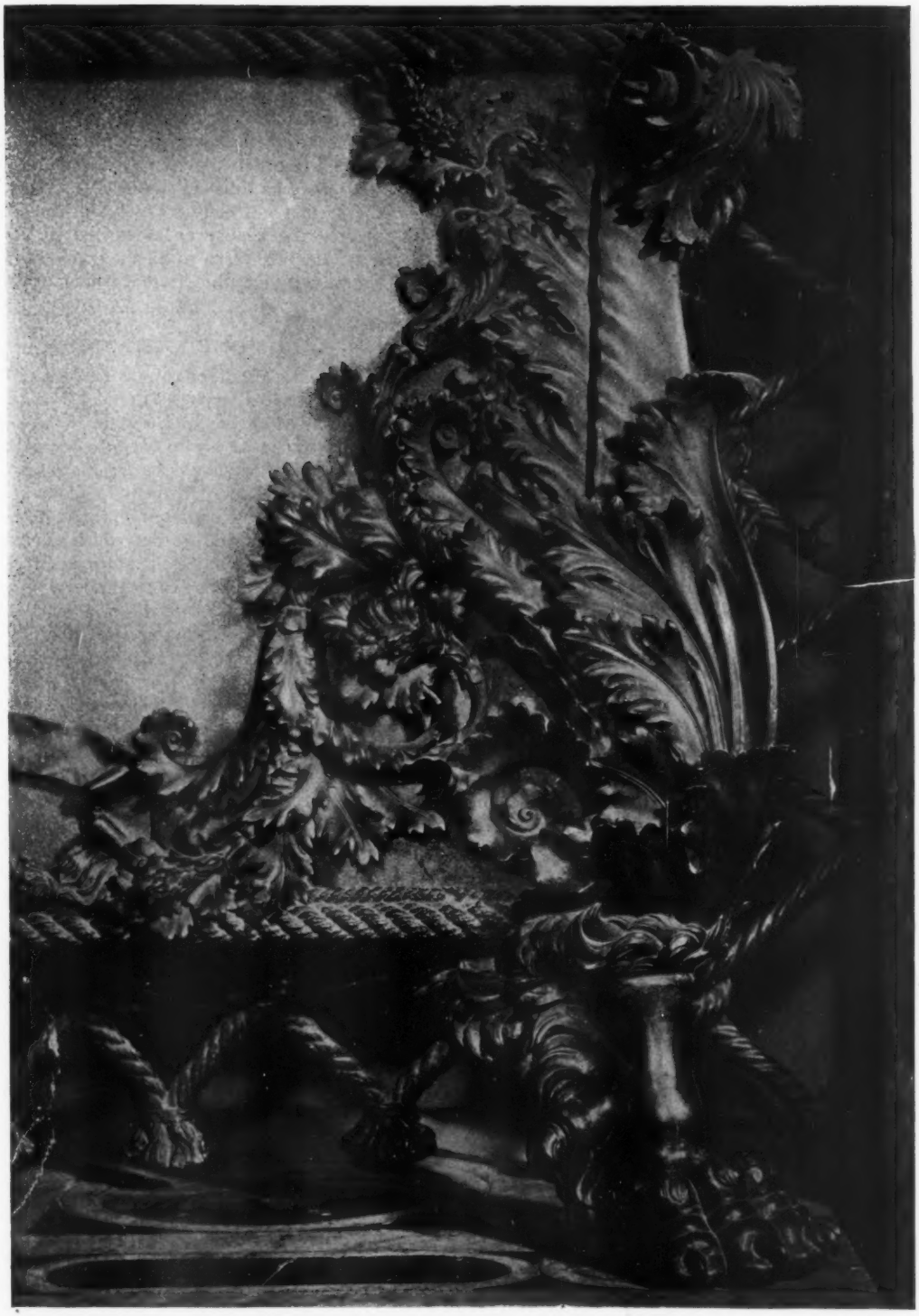
BRONZE ROMAN CASQUE

We have precedent in that golden age of art in Italy, when the craftsmen in terra-cotta and other burnt-clay products, in iron, bronze, the precious metals, leather and fabrics of the richer sort, all worked toward one artistic end, of which the architect was the common mentor.

Perhaps it is a hopeless task to endeavor to bring about a millenium where one might witness the lion and the lamb in the arts of the craftsman dwelling together in harmony. The repose of the lamb inside the lion, so often commented on to-day, may be considered evidence of "good business," but this condition, along with others we have set forth, certainly will not advance the cause of good craftsmanship.

The man who, when peace reigned, traveled through Italy and France, where he might wander as inclination prompted in search of those things in which he had particular interest, did not fail to note the care, amounting to reverence, that was bestowed on the art treasures indoors and out that are the heritage of centuries of the highest development of craftsmanship.

In strong contrast to this very evident appreciation not only of the intrinsic but artistic



WROUGHT IRON AND BRONZE DETAIL, MONUMENT OF THE MEDICI, BY VEROCCHIO
CHURCH OF S. LORENZO, VENICE.

BRONZE AND IRON GRILLE, PARIS

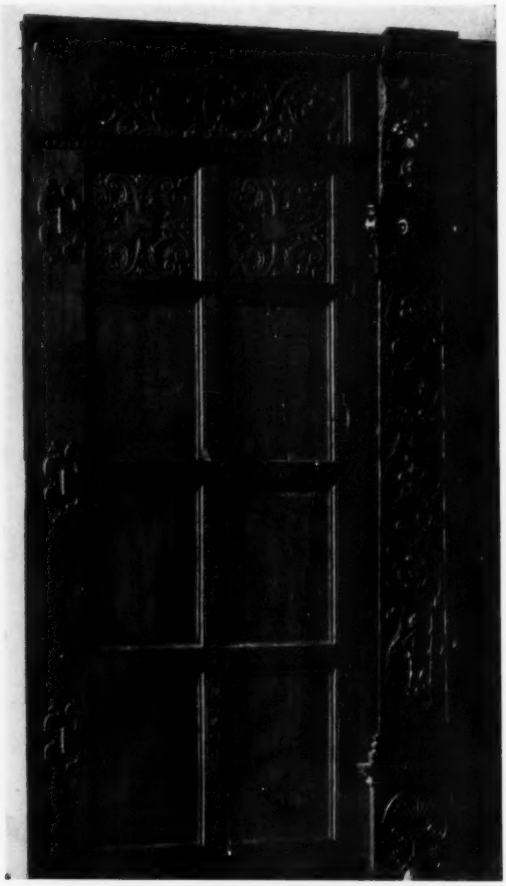
value of these things are conditions that confront the saunterer along the streets of our large cities. An architect may with care and artistic ability design a façade of much beauty, only to have its details covered by the unsightliest of signs. Those who supply decorative features in which they take a proper pride as representing every ounce of skill they command will be righteously indignant at such mal-treatment of their work. We recall many examples: Iron balconies and rails hand wrought to such rare perfection as to make them works of art, serving as supports for poorly designed signs.

In a certain large building noticed in one of these walks about the city there was a pair of bronze doors of unusual excellence. But a few days later, on passing this building, it was found that carpenters had placed in front of the bronze leaves a pair of wooden storm doors. In order to get an anchorage for their work they had driven spikes and screws into the bronze and had carelessly and criminally marred the beauty of a work of art. We have much to learn in all these things. The lesson will take time in its learning.

Historic Ornament

"We should not, of course, be slaves of the historic styles," writes Huger Elliott in an essay on Monumental Design and Memorial Art. "But if we are to use any one of them our knowledge should be so thorough that we can adapt the ornament to modern uses while preserving its essential characteristics. If we are devising forms which cannot be classified historically, still more do we need a thorough knowledge of the underlying principles which have made the ornament of the great periods works of art. A new style—the 'American style' of ornament, let us say—cannot be produced to order. It will come some day, but the development cannot be forced. An individual may invent a recognizable type, but it will do little in establishing a distinctive national, or even local, style. Mr. Louis H. Sullivan of Chicago devised a peculiar form of ornament, quite effective in its way—but it has had no influence on the great mass of ornament produced. Not only is it very difficult to free ourselves entirely from the ornament used in the past, but it is next to impossible to produce forms which will be new and at the same time beautiful. We must first be clear thinkers; we must be familiar with the beautiful ornament used in the past, and know why it is beautiful."

GROUP OF BRONZE VASES FROM POMPEII
NATIONAL MUSEUM, NAPLES



WOOD PANELING
HOUSE NEAR EXETER

(A. D. 1600)

□ □

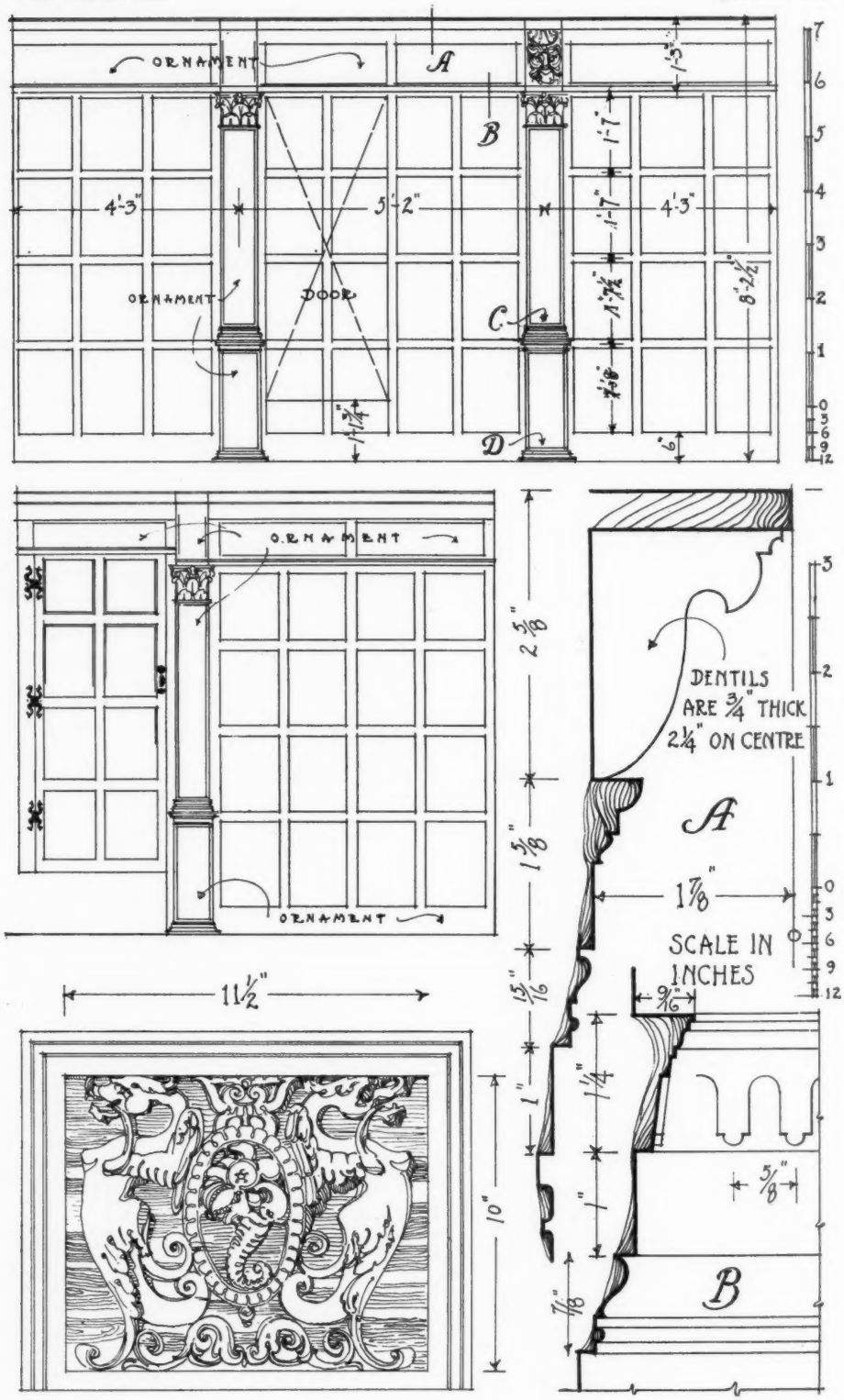
NOW IN SOUTH KENSINGTON MUSEUM

AMONG the many beautiful panelled rooms which the South Kensington Museum possesses there is no finer than that exceptional example, one of the best of the 18th century, which came from a house near Exeter. Only a part of what must have been a noble apartment remains; this is sufficient to indicate what the beauty of the room must have been.

DRAWINGS AND PHOTOGRAPHS
BY WALTER G. THOMAS

ENGLISH DETAILS
NO 4

XUM



WOOD PANELING FROM A HOUSE NEAR EXETER (A. D. 1600)
NOW IN SOUTH KENSINGTON MUSEUM

DRAWINGS AND PHOTOGRAPHS
BY WALTER G. THOMAS

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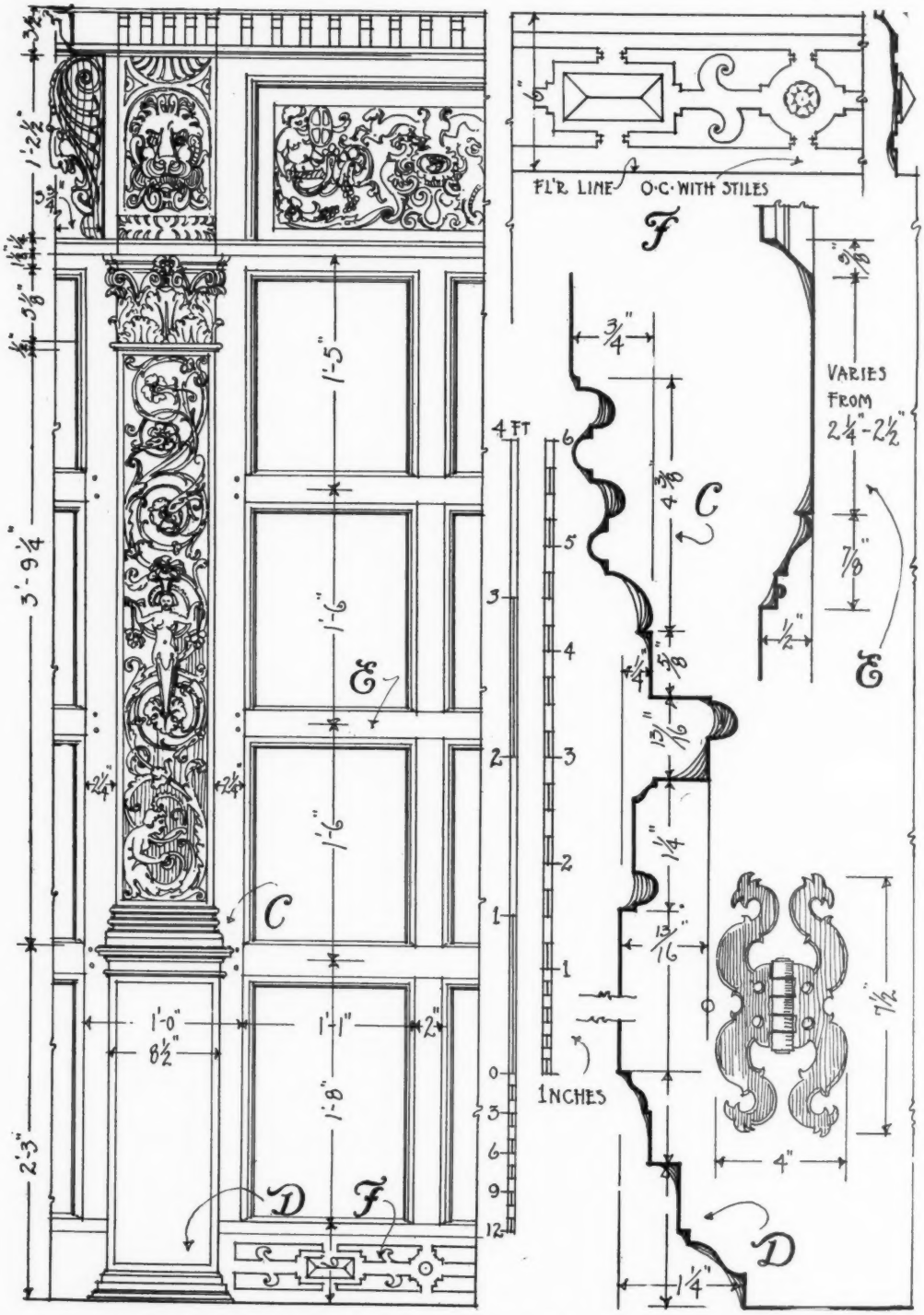

WOOD PANELING FROM A HOUSE NEAR EXETER (A. D. 1600)
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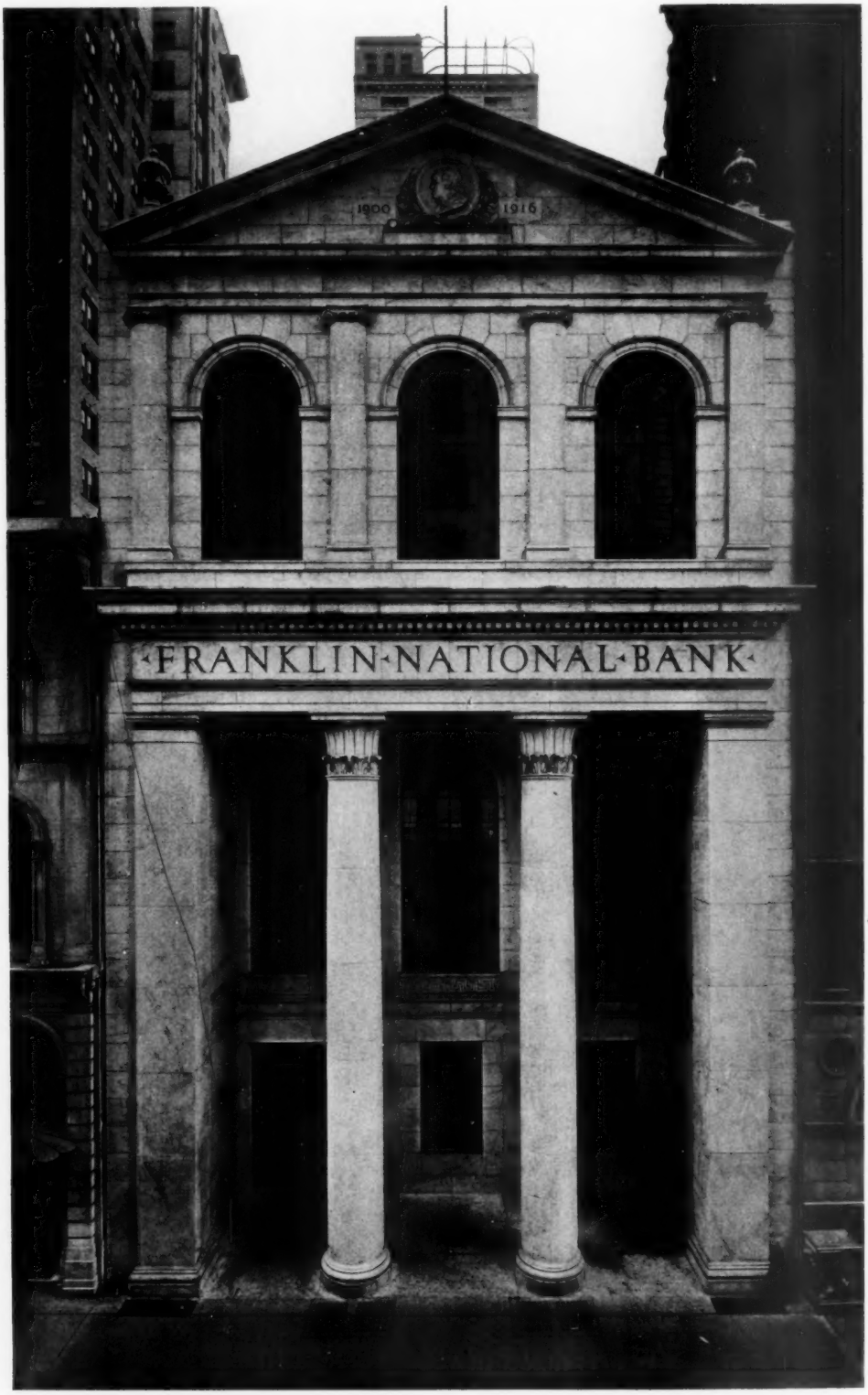

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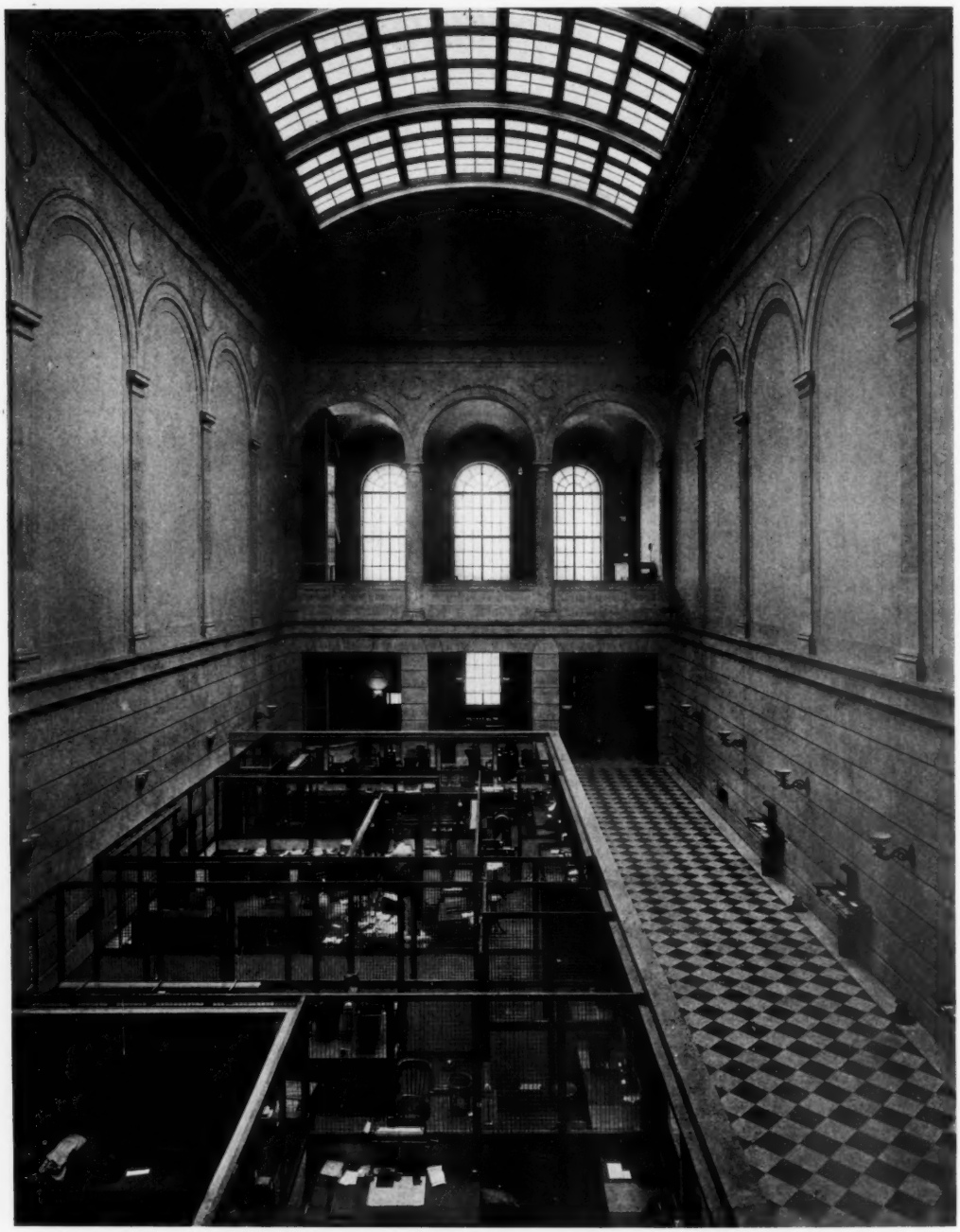

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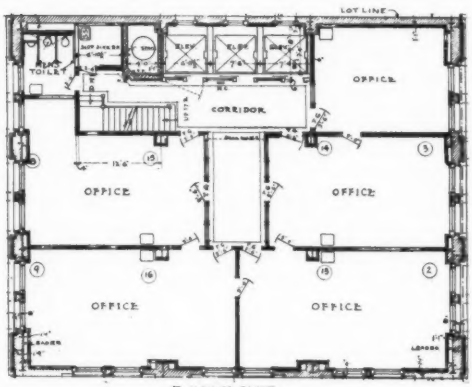
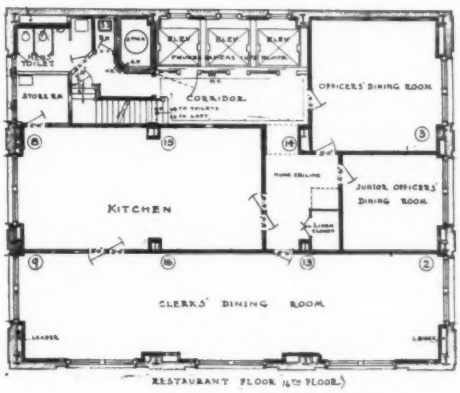
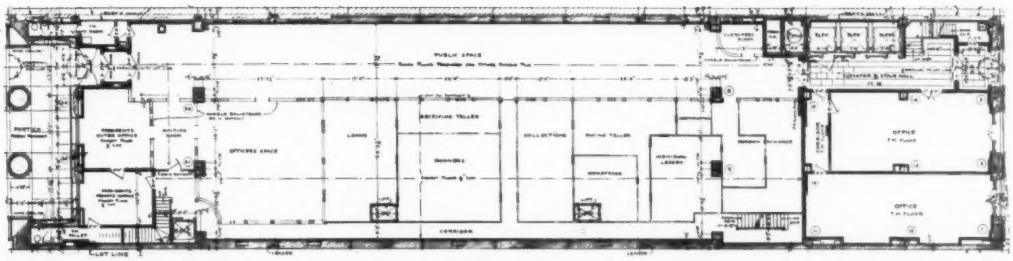


16TH OFFICE FLOOR.

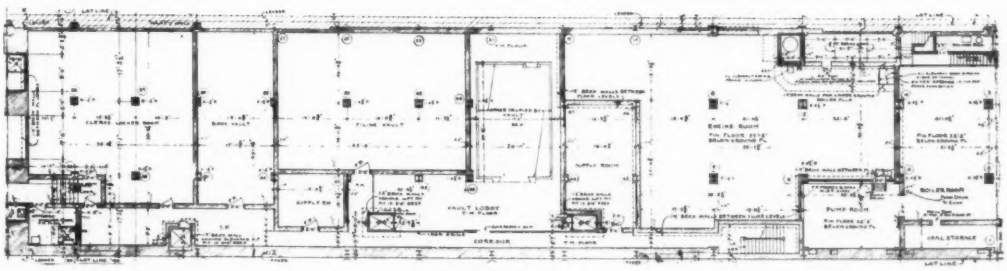


RESTAURANT FLOOR (14TH FLOOR.)

GALLERY FLOOR PLAN



GROUND FLOOR PLAN



CELLAR FLOOR PLAN

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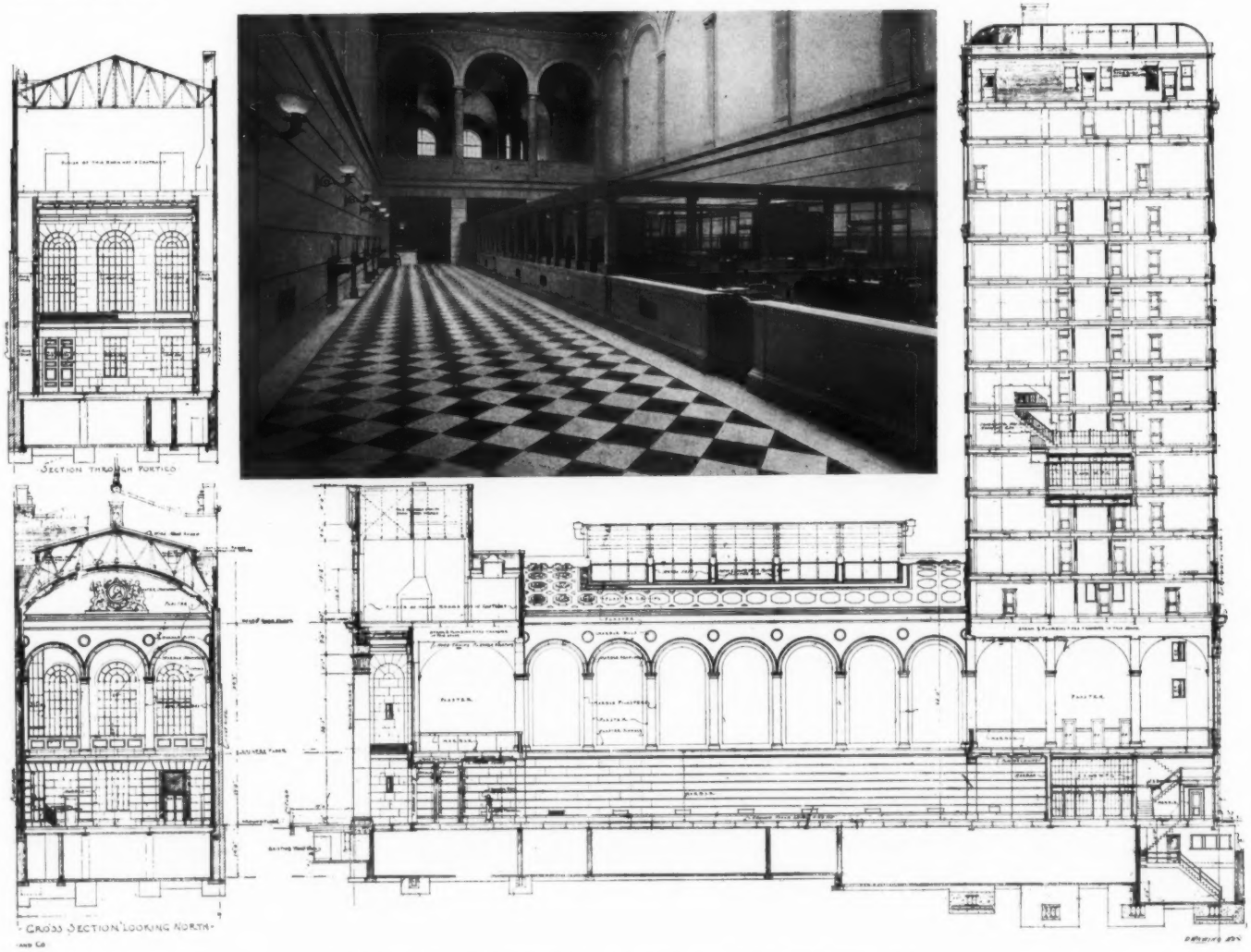

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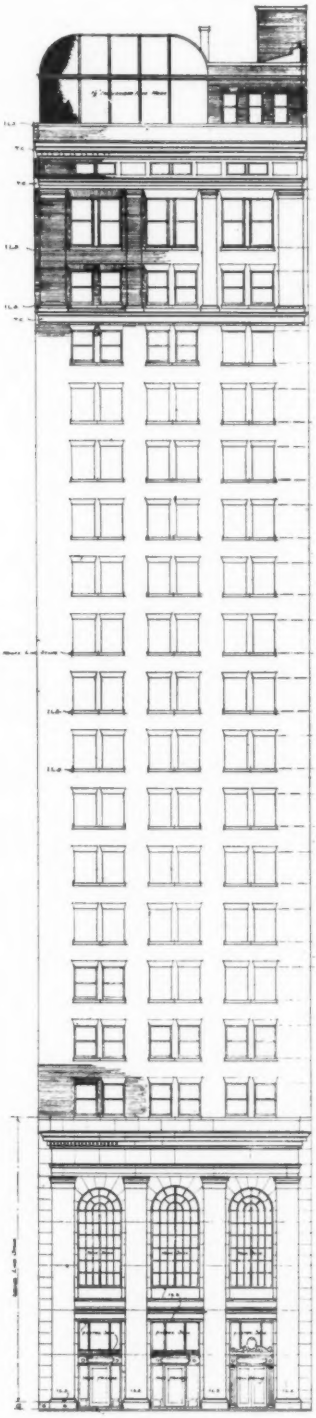

SANSOM STREET ELEVATION

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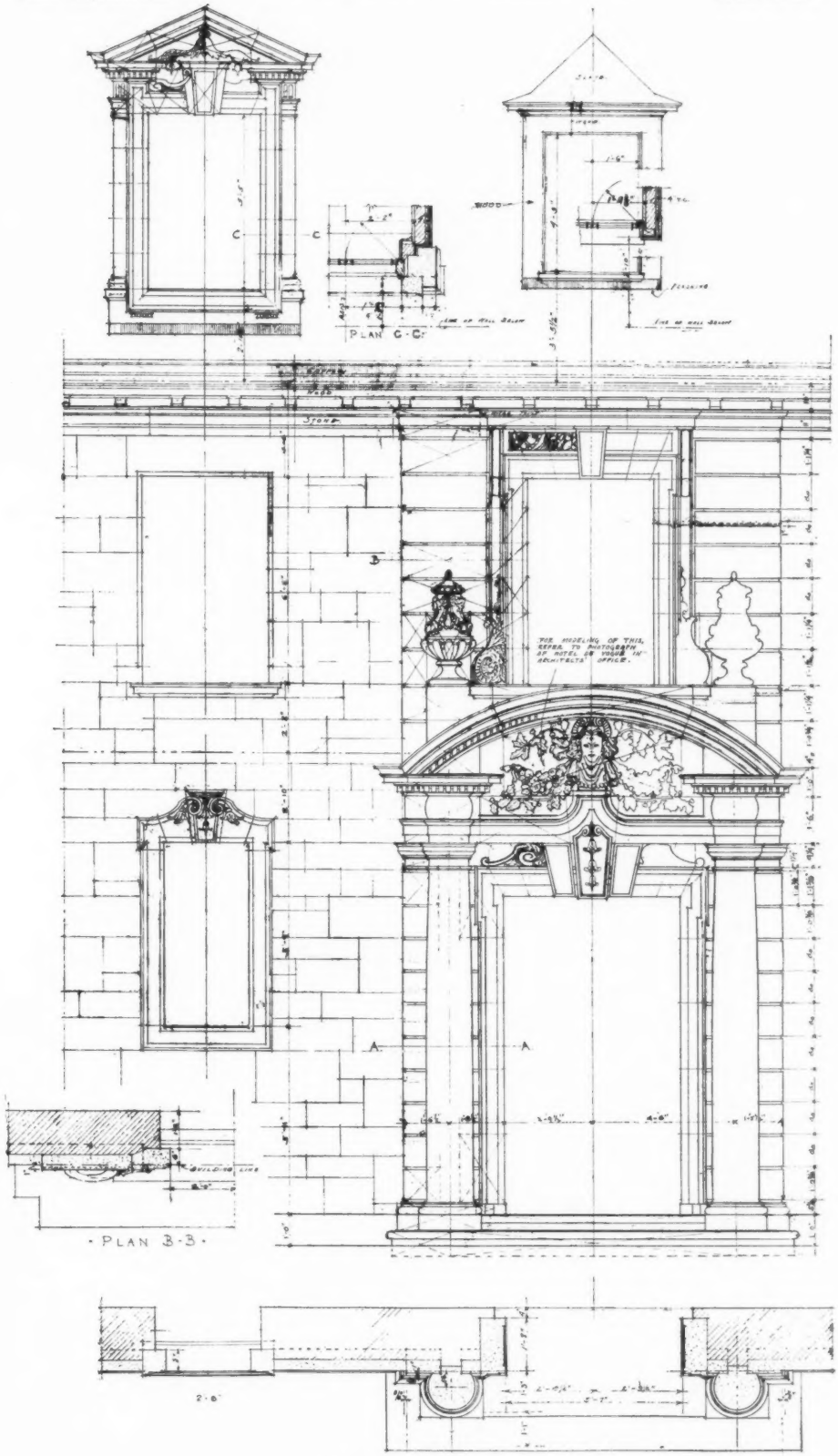
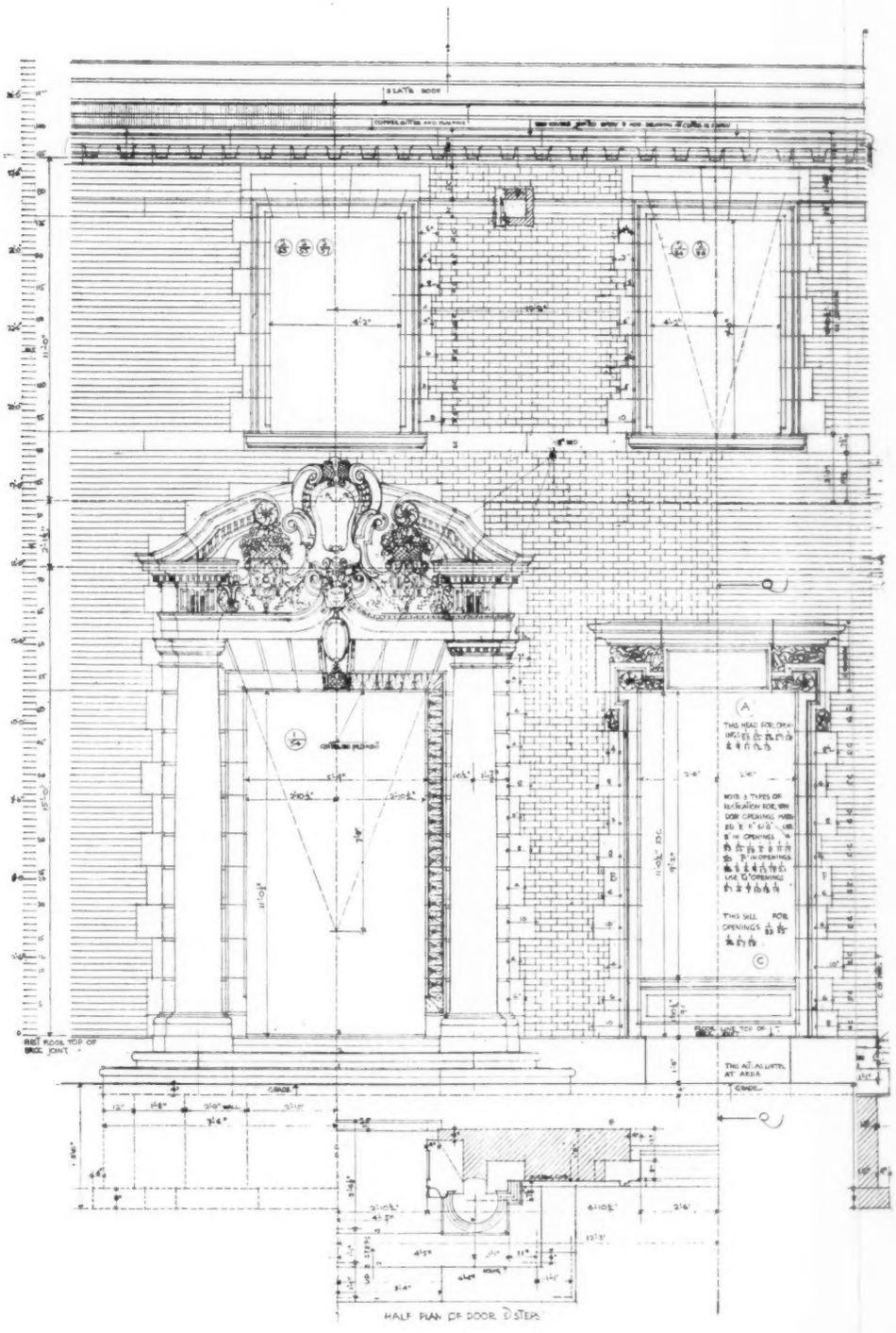
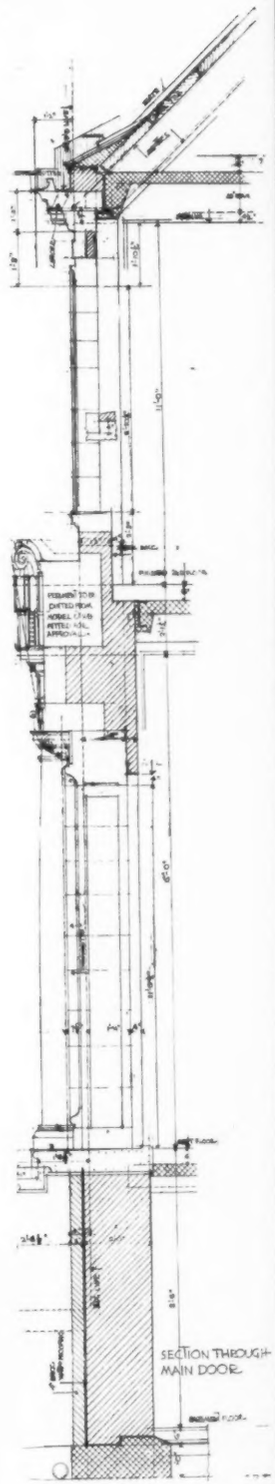


DETAIL OF MAIN ENTRANCE

RESIDENCE OF WM. B. THOMPSON, ESQ., GREYSTONE, N. Y.

MESSRS. CARRERE & HASTINGS, *ARCHITECTS*





DETAIL OF MAIN ENTRANCE

RESIDENCE OF J. INSLEY BLAIR, Q., TUXEDO PARK, N. Y.

MESSRS. CARRERE & HASTIN *ARCHITECTS*

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VOL. CXI JUNE 27, 1917 No. 2166

Restoring French Towns

THE architectural profession has through the Institute of Architects been among the first to offer the services of its members to the Government in whatever capacity they may be of most value, and without doubt these services will be used at least in part. It is also proposed at Champaign-Urbana, Illinois, to train architects to undertake the rebuilding of the devastated towns in France which have been destroyed, wantonly and otherwise, during the war. If this undertaking is at the suggestion of the French Government and merely implies a reserve force to be called upon to fill the depleted body of French draughtsmen, and who will work under French direction, well and good, but otherwise the idea has in it a self-confidence which becomes almost conceit. Heaven forbid that the towns of France should be formalized into model villages by the product of architectural schools, that the hydra-headed varieties of modern, smug, precise efficiencies should spread themselves in France, and that fiat communities should take the place of human, normal and individual growth. These towns have been Prussianized out of existence; they need not be resurrected by a similar system. The traditions of France are best understood by its own people. The charm of the past should not be obliterated by the complacent knowledge of the present. That that charm was not always coincident with cleanliness, or with sanitary conditions need not revolutionize the visual impression of the architecture. Restoration should occur where possible, but it should be carried out with sympathetic appreciation of the past, uninjured by modern vagaries. It may be that this note of warning is unnecessary and unwarranted by the facts, in which case it can be ignored. It may be the purpose of the Champaign-Urbana training to restore the French towns in the spirit of the past, in which case nothing but cordial co-operation can be desired. Incidentally, there is an appeal being made by a committee of American architects to obtain money to restore some one or more of the churches (monuments historiques) destroyed in this implacable war, as a gift to France, in appreciation of our great sympathy and of our debt to her. This offer has been made to the President of the Société des Architectes Diplomés, who has referred it to the French Under-Secretary of State for the Fine Arts, and it has been gratefully and enthusiastically received by all. No better tribute could be offered, entirely in accord with the best possible co-operation in relation to the work of restoration. It is sincerely to be hoped that French villages will still be attractive from their individuality, and not be merely model examples of the inhumanity of standardized architectural units.

C. HOWARD WALKER.

Rebuilding the Cupola of New York's City Hall

IT is somewhat amusing to note the arguments advanced pro and con for retention of the design bearing a clock for the cupola of the City Hall in New York.

That never-tiring correspondent to the editor of his favorite daily paper, "the old subscriber," is spilling much ink, and strongly urges the design that bears a clock. In this he is vigorously opposed by that equally strenuous rival "Vox Populi," who wants the early classic design that first topped the structure.

When the "watch" with lantern and bell patroled the village streets and called the hours and state of the weather he served a useful and very necessary purpose. We were then an early rising people. There were "chores" to be done and all the many things that marked the beginning of a farmer's busy day. He was, perforce, an early riser, and he must needs be informed as to the passing hours, that he might be up betimes and about his appointed tasks.

The town hall, with its clock, robbed the night watch of all his picturesqueness and his duties be-

came that of a constable, the forerunner of a police department.

The town clock became a necessity, and the lives of every dweller in the community took their regulation from its face.

Here in New York our forefathers were but carrying forward an old tradition when they put a four-faced clock in the cupola of the City Hall. At the same time they marred a good architectural detail when they altered the original proportions of the cupola to give space for the clock dials.

For half a century millions of New Yorkers regulated their movements by the City Hall clock, whose time keeping qualities were above the average. In that early time not every man and woman bore a watch. In fact, most men never owned a timepiece until they had reached majority, when, following a time-worn custom, they received a "gold watch" and chain to mark their entry into the ranks of citizenship.

To-day every one carries a watch—some two, one to mark the local time and another the time "back home"—so there ceases to be any good excuse for the introduction of a clock into the new cupola, especially when it interferes with the proportions of the design.

McComb's first idea for the cupola is shown by three sketches of plan and elevation, in the series of original sketches published in THE AMERICAN ARCHITECT, issue of February 5, 1908. None of them includes a clock.

Let us have the one that John McComb intended should surmount his matchless building, and not mar the beauty of the structure by following a precedent that would be "more honored in the breach than in the observance."

To Stimulate Building Activity in War Time

CHICAGO, with characteristic energy, has started a "Build as Usual" campaign.

A preliminary meeting has been held, participated in by the Building Constructors Employers' Association, the Illinois Chapter of the American Institute of Architects and the Illinois State Society of Architects.

Committees have been appointed whose duties will be to make a thorough inquiry into the present building conditions and to formulate reports for consideration.

Federal authorities have emphasized that the Government desires all projected building operations to proceed without interruption.

Howard E. Coffin, a member of one of the advisory committees of the Council of National Defense, has said:—

"Unemployed and closed factories, brought about by fitful and ill-advised campaigns for public and private economy, will prove a veritable foundation of quicksand for the serious work we have in hand. It is evident to every thinking man that our industries on the farm, in the shipyards, in the mines, in the factories, must be more prolific and more efficient. We need prosperity in war time more than when we are at peace. Business depressions always are bad and doubly so when we have a fight on our hands."

Men who are best informed as to the economic conditions now prevailing share Mr. Coffin's opinion. There should be no cessation of activity in any of the phases of building unless it can be shown that they interfere with the Government's plans for the progress of the war.

There is a certain timidity always apparent in great crises like the present, and the timid ones look to the Government and representative bodies for advice and council and the assurance they are unable to secure from their own imperfect perception of conditions.

Action such as has been taken by the Illinois architects and builders will foster a feeling of confidence and safety. It would largely contribute to the general sense of security if this action could be followed by a similar good example in other States.

Standardizing Structural Details

IN an article by Prof. Waterbury, printed elsewhere in this issue, in which he advocates as far as possible the introduction of standardized structural details, reference is made to the obstacles of such a method, due, he believes, to lack of uniformity in building laws. Efforts toward the framing of a basic building code have been made by a special committee of the American Institute of Architects for a number of years. New codes and revisions of existing codes have been put forth by many cities, and their success or failure in actual operation is being closely watched. In the report presented to the last convention of the Institute, the committee expressed the opinion that so conflicting were the main provisions of these various codes that it was not possible to find any middle ground of action on which a basis for the evolving of a code to be generally applied could be lodged. For these and other reasons, any attempt at a basic code would necessarily be postponed for some time. Meanwhile, in view of these conditions, and pending a codification of all the laws affecting building operations, it would seem that efforts "to secure a more perfect realization of the slogan 'Safety First'" rests entirely with the architect and the structural engineer.

The Businessman Architect—Part III

By S. J. T. Straus

OBTAINING FINANCIAL CO-OPERATION IN BUILDING OPERATIONS

THERE is one essential to the negotiation of a loan which I wish to impress upon the readers of this publication at the outset. It is the necessity of proper presentation of the project to an investment banker. Such a banker, when a proposition is presented to him, has two points which he desires to establish in his mind before negotiations are gone into fully. They are:

First—Is the loan one that would interest his House and merit further investigation?

Second—If it is, has the project progressed to such a stage that all its principal details are arranged and construction of the building can be started?

A banker does not care to waste the owner's time or his in useless discussion of a loan which would not at all interest him. Neither does he care to consider "dreams," full of impracticabilities, and impossible of execution. Hundreds of such propositions are presented to an investment banker every year, and a loan which bears the familiar earmarks of an impracticable, unsound proposition will naturally be placed in the same category by him.

How to Obtain Prompt Decisions

A loaning institution is desirous of making a prompt decision when a loan is presented to it for such action, but a thorough knowledge of the facts, and a businesslike presentation of them, is essential if this is to be done. Then, if the investment banker, from his superficial examination of the project, decides that the loan might prove attractive, will follow a more thorough investigation.

I do not wish, however, to give the impression that a loaning institution does not care to assist an owner in working out a financial plan—this is far from being true. It is willing to co-operate in this manner when a proposition is fundamentally such as would meet its requirements.

Those Dreaded "Requirements"

The requirements which capital demands of borrowers are usually of great aid to the latter. Every large investment house has in its employ a staff of practical real estate and construction men, who go into, thoroughly, every promising loan submitted, and judge it from a purely business standpoint. This examination is often the means of greatly improving a building project. These experts have a faculty of "spotting" weak points in a project, which might, if allowed to remain, seriously affect its success. Most of the requirements of a loaning institution are designed to eliminate these unsound features, and when they have been overcome the readjustment is usually not only more satisfactory to the loaning institution but also to the owner. The fact that a conservative house has approved of the project is at least a confirmation, by those qualified to judge, of the builder's judgment.

Changes are costly and cause serious delays. A knowledge of a loaning institution's requirements is of great value at the outset, and will sometimes prevent even the total rejection of a loan, which would necessitate starting all over again. In order to appreciate a loaning institution's requirements it is necessary to look upon the problem of how to make a building "pay" (for this is the final requirement of the investment banker), from two viewpoints. They are, that of the tenant who will occupy part or all of the building and provide the income; that of the owner who has invested his money and credit, and will expect a satisfactory return therefrom. The degree of skill with which the sometimes conflicting requirements of tenants and owner are balanced will naturally determine the financial success of the building.

Where Architect Comes In

It is in this connection that the architect can be of invaluable aid to his client, by reason of his ability to judge and appreciate both sides of the question. He can be the connecting link between the loaning institution and the borrower. He can facilitate negotiations and perhaps overcome difficulties standing in the way of the successful consummation of the loan.

I will try to give some of the fundamentals which a loaning institution will require.

1—Location

Usually the first question which will come to the mind of an investment banker in connection with a loan is, Where will the building be located? He will usually be guided by three considerations affecting the location. They are:

The need in a locality for a building.

The advantages which the locality will offer the building.

The permanency of this mutual adaptability, and prospects for its increase.

I can dismiss the subject of the need in a locality

for a building with a few words. This is based chiefly on individual conditions and is hard to generalize upon. But you may be sure that the investment banker will go into the subject very thoroughly—not only himself, but also through experts who are thoroughly familiar with the class of building involved.

Advantages Offered to Building by District

There is more to say, however, regarding the advantages a district will offer a building. For convenience in analyzing these the investment banker roughly classifies buildings in four groups—namely, residential, business, pleasure, and industrial. I will take each one separately.

Residential

Transportation—The tendency nowadays is for residential property to be located far removed from the center of the city. This is the result of the encroachment of business on residential sections, and the rapid development of transportation. An investment banker, with this in mind, will not favor residential property located near the center of a large city, because the future of such a district is questionable. Usually it will be composed of former residences which are now used as boarding houses, which naturally lowers the character of the district. There are, of course, exceptions to this general rule, but these are few and far between. As residential districts have moved far out, because of the development of rapid transportation, transportation is naturally one of the first essentials to such a district. And the investment banker recognizes that transportation does not alone consist of street cars, trains, subways or the elevated—he knows that the motor car has become an important factor in transportation, and if the building is located close to a boulevard or other means of direct motoring downtown, this makes the location all the more desirable.

Advantages and "Nuisances"—Although a residential section must be removed from the center of the city, it must be served by a good business center. Such features as proximity to parks, bodies of water and the like are important, and the district must be restricted against "nuisances" such as factories, saloons if possible, and sometimes schools.

Business

Downtown—Downtown business property can be dismissed with just a word. Such property is naturally assumed to possess almost every advantage.

Wholesale and Loft—With semi-downtown business property, such as that devoted to wholesale uses, there is one requirement which the investment banker will bear in mind. That is the need for such buildings to be located near the center of the city and accessible to depots, hotels and the like for convenience of out-of-town customers, but still well provided with shipping facilities. This accounts for wholesale and loft property being located just outside of the downtown district, sandwiched in between the former and the transportation centers.

Outlying—The most important requirement of outlying business property is the necessity for being situated as near as possible to its customers, as that is the only reason for its existence. This is the fundamental reason underlying the tendency of retail business districts to grow and move in the direction of the best residential sections. It is important, of course, that such districts be located on a street car line.

Pleasure

As with business property located in the downtown district, the subject of theater buildings and the like, in the center of the city, need not be discussed here. This class of property is also dependent upon residential districts, and as it is usually located in the business centers, the same considerations as to location affecting the latter will apply to property devoted to pleasure purposes.

Industrial

The requirements affecting the location of industrial plants are mainly those of proximity to sources of supply of raw materials and good shipping facilities by rail or water. Industrial plants do not necessarily have to be located in the largest cities, in the opinion of an investment banker. In fact, medium size cities sometimes offer cheaper labor, lower taxes, and better living conditions to employer and employees.

Stability

When the investment banker has proceeded this far in his analysis, the question of permanency has usually taken care of itself. If his investigation has proven that a district is in need of a building, there have been sound reasons for it; the same reasons insure the permanency of the need and future growth.

The reasons given above for the movements of districts often result in the complete transformation of a locality, and the architect should consider carefully the effect, certainly not advising a building project in a district whose future is unknown or speculative. He should select those localities which are on an upward trend, in line with the development of the city. If he does this, he will be in accord with the requirements of a loaning institution.

II—Building

After the location has been approved, the plans and specifications are carefully gone over by an expert in the employ of the investment banker. He estimates the cost of the building, and endeavors to suggest methods for reducing this and securing maximum utility value without detracting from the artistic. He is often able to accomplish his purpose. This man is usually a practical architect himself, and will work hand in hand with the architect of the building.

Income

The architect will find that the investment banker considers the income to be derived from the building of great importance. Adequate income is an invariable requirement of a loaning institution, and no amount of physical security will compensate for a small income. An investment banker will usually refuse to consider a loan where the net income is not sufficient to pay the maximum interest charge at least two and one-half times. Such a margin is necessary to insure proper reduction or amortization of the principal, besides providing a reasonable profit for the owner. I have explained the amortization plan in a previous article. As will be remembered, it provides for the maturity of about 5 per cent of the bonds per year after the second year. This offsets the depreciation, and, in addition, renders the loan more attractive for possible refinancing after maturity.

Monthly Payments of Principal and Interest

Another plan is supplementary to this. It is still new and has not as yet reached the popularity it deserves. In accordance with it the borrower is required to deposit, in advance, in a designated bank, each month, one-twelfth of the amount of principal and interest coming due during the current year. This is protection all around. It assures the prompt application of the earnings of the property as they accumulate to the payment of principal and interest, and does away with any tendency at all of the owner to divert these funds to other uses.

Importance of Standard Buildings

An investment banker does not look with much favor upon "freakish" buildings. Some owners are of the impression that if a building is out of the ordinary and distinctive it will be more favorably considered as security for a loan. The more attractive a building is, of course, the more desirable it will be to tenants. But when such a building is occupied by one concern, when an effort is made to create unusual and ornate design, it is not likely to be maximumly successful financially, Such features add to the cost without increasing the income. The most profitable building, best suited for security in a loan, is that occupied by a number of tenants—thus providing varied sources of income; and of a standard character, easily adapted to the requirements of many firms.

In a previous article I have discussed the mistakes which are sometimes made in under- or over-improved property. I will not dwell upon the subject here, but wish to mention it as being a consideration of the investment banker in judging a loan.

III—The Borrower

There are three requirements of a borrower—namely, character, financial responsibility, ability. The late J. P. Morgan used to say that if the borrower possessed a spotless character he would consider him an excellent risk. While the average investment banker will not go as far as Morgan, character will, nevertheless, be a most important consideration with him. Combine character and a demonstrated ability in connection with the class of building which will be erected, and the owner has progressed a long way toward establishing himself in the banker's confidence.

Financial Responsibility

Financial responsibility does not mean that a borrower must be possessed of unusually large means, but does require that his resources be in proportion to the size of the undertaking. "Shoestring" operators will not get very far with a conservative investment banker.

If a corporation is to be formed and stock sold the investment banker will inquire into the financial plan. His advice in working this out will usually be of great value to the owners, and you can be certain of one thing—he will not allow any proposition to go through which is not thoroughly worked out and sound in every particular.

Before the investment banker will allow construction to begin, he will assure himself that the amount of money on hand is sufficient to complete the building free and clear of all mechanics' liens.

* * * * * * *

One more word about the architect. He can be, as I said at the beginning of this article, the connecting link between the loaning institution and the borrower, and one of the most important services he can render his client is that of bringing him to the logical loaning institution. Investment bankers' requirements vary, and while one may decline a loan because it is not within his scope or field of operation, another will accept it. It is therefore important that the businessman architect place himself in close touch with investment bankers, so that he can be in a position to advise his clients when he is consulted regarding financing.

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WROUGHT IRON GRILLE, VIENNA.

Structural Details

By L. A. Waterbury

Professor of Civil and Architectural Engineering, University of Arizona

To the architect who will ask himself the question, "What faults are prevalent among the designers of American buildings?" one answer which will be likely to come into his mind is the use of poorly designed details. The demand for haste, which is ever present, allows but scant time for the consideration of the most important details, while multitudes of minor parts receive absolutely no scientific investigation. This general criticism applies throughout the range of structural work, from the smallest to the largest job. In the second attempt to build a Quebec bridge, the suspended span was plunged to the bottom of the St. Lawrence River, because a temporary support was inadequate for its purpose. The details of structural steel design have been more carefully studied than the details of many types of construction, but even in this field the faults have not all been eliminated; for timber construction, it is not uncommon to find joists, headers and trimmers so inadequately framed that the connection details are capable of supporting but a fraction of the load which the joists themselves can carry; and, in concrete construction, the jobs are legion in which, although the main sections may have been carefully proportioned, satisfactory details appear to be the exception rather than the rule.

If the condition which has been described is not overdrawn, it behooves American architects and engineers to give some thought to ways and means whereby it may be possible to secure a more perfect realization of the slogan, "Safety First." To the writer, one feasible line of progress appears to be an increase in the use of standard details. Under some conditions the use of standard parts should result in increased economy, and in most cases in which such a practice has been introduced economy rather than safety has furnished the motive force. Consider, if you will, the advantage of the use of standard parts from the standpoint of safety. A particular job is at hand for which some detail, say a column footing, is needed. If reinforced concrete is the material to be used, items which should be considered will include bearing area, punching shear, diagonal tension, area of steel, and bond stresses. Lack of time frequently prevents a careful consideration of all such elements, and so the main dimensions are likely to be computed, while

in other particulars the part is assumed to be satisfactory. Furthermore, a considerable amount of structural drawings is prepared by draftsmen who have not had sufficient training in applied mechanics to appreciate the needs of every case. In either event, there will be a greater probability that the design will be both safe and economical if a standard detail of footings is at hand, from which the proper dimensions and required materials can be selected, than if a hasty design is made for the special case. The preparation of standards is likely to be intrusted to those who will best appreciate all of the elements which need consideration, as a result of which items of importance are not likely to be either overlooked or ignored. Other advantages resulting from the use of standard parts are: (1) increased speed in the execution of plans for any particular job, (2) advantageous employment of office force during slack periods, and (3) the use of standard details results in greater ease and certainty in the estimation of quantities.

In addition to that which has been mentioned, a further advantage, the elimination of a part of the work of detailing, might be obtained by a consistent use of detailed parts. As yet, this idea is largely visionary, except in certain lines of work, for the reason that any considerable application of the method requires a more or less general acceptance of certain standard details. In steel construction this method at present has considerable application, only general drawings being furnished to the contractor, who must do his own detailing as well as furnish the materials. In the field of reinforced concrete, suppose there should be available standard details for all of the ordinary beams and girders encountered in ordinary practice. Under such conditions a simple line drawing of a floor plan, on which would be indicated the section size and number of each member and the number for the standard detail to be used for each end of each member, would furnish to the contractor as adequate information for his use in bidding as is afforded by the average present detailed plan, and the work in the architect's office would be much simplified. Special members could be more fully detailed, and where needed additional working drawings could be furnished during the progress of construction.

Probably the most serious obstacle to any general standardization of structural parts is the present lack of uniformity in building laws. Some of the national technical societies have done excellent work in the preparation of standard specifications, as, for example, the Report of the Joint Committee on Concrete and Reinforced Concrete; but even this is only a beginning. The co-operation of architects and engineers is needed to secure legal recognition of uniform fundamental requirements in the building codes throughout the United States, and to secure regulation which, in each State, shall be at least state-wide. The present practice of delegating to each city the determination of the regulations which it may desire leaves large areas with no restrictions whatever, as a result of which many buildings of more or less importance are erected which are positively unsafe. In the southwestern portion of the United States one thing which is in evidence in nearly all building work is the tendency toward cheap construction. The architect and the contractor are, for the most part, free to curtail the materials used to the minimum which conscience will permit; and, to make a bad matter worse, the plans for nearly all buildings of a public character are obtained by competition. Naturally, the architect who will present the most attractive plans and who will guarantee the largest amount of desirable space for the given appropriation is nearly certain to win the prize. Poor appearance and a poor arrangement of plan are often apparent from an inspection of preliminary plans, but it would be an exceptional item affecting the safety of the structure, which could be thus detected. Such a condition must result in forcing the architect to take undesirable chances, in the assumption of live loads, in the allowable stresses which are used and in the use of insufficient details. For localities now having no restrictions, the first problem is to secure some good building code, but when this is being adopted the more closely it can conform to accepted standards the better it will be for all concerned.

When the ideal of uniform building regulations shall have become a reality, further advancement may be achieved in the standardization of structural details. In the field of steel construction, the steel companies and the American Bridge Company have used standard details which have been widely adopted, but in other lines of construction a corresponding standardization has not been attained. Manufacturers of special types of reinforcing materials have distributed details, applicable to the particular lines of concrete work for which their products are used, and many offices have standards for their own use. However, it is the writer's belief that an investigation of architectural offices throughout the United States would reveal but a few of the best and largest in which the standardization of details has been systematically studied. The average office waits until the need arises and then designs the part to fill the place. When, at some later time, a similar part is required, the detail is copied, and so it may frequently happen that a detail which is neither efficient nor economical may come to assume the role of a standard in an office.

The writer realizes that it is much easier to criticise than to do right, and this discussion is offered

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in no spirit of condemnation, but rather it is given in the hope that it may stir some to consider, each for himself, what may be done to place his own practice upon the best possible basis, and what may be done to attain the highest efficiency for the entire profession.

Recent Legal Decisions

MECHANIC'S LIEN CAN BE FORECLOSED BY IMPROVEMENTS MADE ON A VERBAL AGREEMENT THOUGH THE ONE WHO SELLS AFTERWARD REFUSED TO KEEP HER PROMISE TO MAKE DEED. —Suddard *v.* Lewis. Supreme Court of New York, 162 N. Y. S. 493.

By a parol agreement the defendant, who was the owner of a village lot, agreed to sell it to the plaintiff for $70 and to deed him the property as soon as her deed came back from the county clerk's office, and it was agreed that the plaintiff should have the privilege to go on the lot and build a cellar wall and foundation at once, and before the deed was made. Plaintiff entered upon the lot, built the cellar wall and foundation, which cost $73.50 in work and material, and thereupon the defendant repudiated the contract and refused to convey the premises, or pay the plaintiff for such improvements. Plaintiff filed a mechanic's lien for the material and work, and in this action to foreclose the lien it has been determined that he has no lien, as the improvements were not with the consent of the owner. It is inequitable that the defendant may have the benefit of the improvements without paying therefor. At the time the agreement was made, she either intended to carry it out or to repudiate it and get the benefit of the improvements. There is nothing to indicate what, if anything, caused her to change her mind, and repudiate the agreement after it was made. The plaintiff clearly contemplated that he was making the improvements for his own benefit, and very probably the defendant contemplated that the improvements were being made for her benefit.

There can be no quarrel with the cases which hold that, where a purchaser upon an executory contract of sale has the right to enter into possession and make improvements before conveyance, and fails to perform the contract upon his part, the vendor cannot be charged with the value of improvements made by or for the vendee under such circumstances, and in that manner be improved out of his property. This is not such a case. The parol agreement, when made, was void, under the statute of frauds, and if the defendant did not carry it out the improvements as matter of law would be for her benefit. Her consent, therefore, that the plaintiff might enter into possession and make the improvements, followed by her refusal to carry out the agreement and convey the premises, may well be considered a consent under the lien law that the improvements be made. The parol agreement, and its breach by the defendant, are only important to show that the improvements were made upon her land with her consent and for her benefit. She cannot repudiate the agreement, and then claim that the plaintiff, as owner, made the improvements upon her land for his benefit. By repudiating the agreement she elects to appropriate the improvements and to treat them as made upon her land with her consent and for her benefit. Perhaps the easier remedy for the plaintiff would have been an equitable action to compel a specific performance of the contract, but his failure to resort to that remedy ought not to prejudice him here. Presumably the value of the premises has been increased by the cost of the improvements. No injustice is done the defendant, equity is satisfied, and the law is not strained by holding that the defendant so far consented to the improvements that the plaintiff has a valid lien upon the premises therefor.

The judgment should therefore be reversed upon the law, and the facts, with costs, and judgment directed for the plaintiff, adjudging the validity of such lien and providing for its foreclosure, with costs.

ARE "FOUR FAMILY FLAT" BUILDINGS "UNHEALTHFUL"?

This question was before the Supreme Court of Minnesota and decided by them on May 11, 1917, in a case entitled State ex rel. Roerig vs. City of Minneapolis, reported in 162 Northwestern Reporter, page 476. Roerig and others sought a permit from the Minneapolis inspector of buildings to erect a four-family flat building within the residential district of the city and the permit was refused for the reasons that the same would be "unhealthful, cause congestion, added fire risk and greater difficulty in police supervision." The court referred to a former case decided: State ex rel. vs. Houghton, 158 Northwestern, page 1017, in which case it held that "prohibiting the owner from erecting a store building upon land within a residential district" is beyond the police power and therefore void; that the "store building" case and this "four family flat" building case were alike and, therefore, ruled that Roerig was entitled to a permit to erect the four-family flat building in the residential district.

American Architects in the War

The following members of Washington State Chapter, Seattle, Washington, have joined the colors: J. S. Cote, Corps of Engineers; W. Marbury Somerville, U. S. Navy; H. O. Sexsmith, First Sergeant American Ambulance Corps No. 12.

Draughtsmen who have enlisted are: Philip French, Second Lieutenant Washington Coast Artillery; Clarence George, Washington Coast Artillery; George Haugen and C. F. Cole, aviation division of the Signal Corps, now in San Diego, Cal.; Clare Kenney, at the Officers' Reserve Corps, Presidio, Cal.; Arthur Anderson, Coast Artillery; Burton Carr, Officers' Reserve Corps; F. A. Hansen, Navy; Charles Williams, Radio Service, Bremerton Navy Yard; Herman Lindhaust, Coast Artillery; L. J. Bain, Outpost Company, Signal Corps; E. W. Elwell, Naval Reserve Officer, and Walter Bogart, Signal Corps.

New Discoveries in Pompeii

Interesting discoveries continue to be made at Pompeii. A large house belonging to one Trebius Valens in the Street of Abundance has been found in an excellent state of preservation. Other fine private houses have been excavated in the same street, but large shop windows and artisan premises suggest that it was of more business importance than even the Stabian and Nola Streets.

Civil Service Examinations

The United States Government announces an open competitive examination for mechanical draftsmen for vacancies occurring in the office of chief of ordnance, War Department, at Washington, at salaries ranging from $1,000 to $1,400 a year. On account of urgent needs of the service, applications will be received at any time and the papers will be rated immediately upon their receipt in order that the appointments may be made with the least possible delay. Applicants should apply to the Civil Service Commission at Washington for Form 1312.

Also an examination will be conducted under the same general rules for a vacancy in the position of assistant to the chief draftsman, Watertown Arsenal, Watertown, Mass. The duties of the position will be the design and construction of ordnance materials; design under the general head of mechanical engineering, and the supervision, when required, of the work of the drafting room. Apply to the Commission for Form 1312, stating title of examination required in each case.

Lining Up the Architects for Service

An important work is being accomplished by the various State Chapters of the American Institute of Architects in carrying out the request of the Council of National Defense that a census be obtained of architects willing to serve the Government in the various departments where such technical services as they might offer would be useful.

Each chapter is compiling a list in which every qualification of each man enrolled is set forth. By this very wise method we may be sure that every man that goes into the service will find work awaiting him for which he is best qualified, and we shall, it is to be hoped, be spared experiencing the unfortunate conditions that beset the profession in France and England during the early months of the war.

Heat-Insulating Efficiency of Materials

Study of the results of an investigation of the heat-insulating efficiency of various materials has been made by the United States Bureau of Standards, and although absolute statements would not be warranted at present, certain preliminary conclusions have been stated. In general, it appears that gypsum shows a greater efficiency as a fire-insulating material. Concrete and clay vary somewhat, depending upon their porosity. The denser clays conduct the heat a little more rapidly than concrete. The more porous clays, however, conduct heat somewhat less rapidly than the concrete. The effect of the aggregates on the concrete is not very marked in changing the relative conductivity. There is little difference in this respect between gravel, trap rock, slag and soft-coal cinder aggregate. Limestone concretes, however, seem to stand out as giving a much lower conductivity. There was found to be but little difference between the behavior of the gypsum specimens furnished by different manufacturers. The dense high-plaster mixtures give much better results than the porous low-plaster, high-water mixtures.

Federal Committee on Lumber

To facilitate the operations between the Government and the producers of lumber, the Council of National Defense has appointed a subcommittee of fourteen on lumber and forest products, with R. H. Downman, of New Orleans, president of the National Lumber Manufacturers' Association, as chairman.

Bernard M. Baruch, chairman of the advisory commission's committee on raw materials, in making

the appointment, said he believed the personnel was such as to insure a high degree of efficiency in meeting the lumber needs of the Government. Mr. Downman and several other committee members are to maintain a permanent organization in Washington.

Other members of the committee are: D. O. Anderson, Marion, S. C.; Henry S. Graves, chief forester, United States Forest Service; Charles S. Keith, Kansas City, Mo., president of the Southern Pine Association, and W. H. Sullivan, Bogalusa, La.

Test of Hollow Tiles

A series of investigations of the strength of hollow tiles as developed in walls of varying thickness has been started at the United States Bureau of Standards by the construction of a number of these walls 5 feet long by 12 feet high. The walls so far constructed are of three thicknesses—6, 8 and 12 inches. Those already laid up have been set with the tile on end. It is proposed to construct walls of similar size with the tiles placed on their sides. Other variables will enter into the work, and when the investigation is completed about 50 will have been built. Some of these will be tested by direct compression; others by applying a load across the middle of the side with the purpose of determining somewhat the ability of these walls to withstand wind pressure.

The investigation has been undertaken at the request of several manufacturers of this material. Some of the data will be made available for the American Society for Testing Materials, which is now engaged through one of its committees in adopting specifications for hollow building tile.

Rheims to Be a Pantheon

France Will Dedicate Ruin to the Dead of All the Allies

Conversion of the battle-torn Cathedral at Rheims into a pantheon for the unidentified dead of all the armies fighting in France for the common cause of democracy has been determined upon by the French Government.

The plan, to be put into execution as soon as the war is over, was announced in despatches to the headquarters in Washington of the French Restoration Fund. It is proposed that the Cathedral shall not be restored, but that representatives of all the Allies shall place their battle flags within what remains of the historic edifice, which then shall be formally dedicated as a monument to the heroic dead.

Arab Reed Architecture and the Arch of Ctesiphon

In an interesting communication to the *Architectural Association Journal,* Mr. A. N. Peckham, A.R.I.B.A., describes the construction of Arab huts, and infers from them the derivation of the arch of Ctesiphon:

"As we understood that we should have to spend the hot weather here (Mesopotamia), and no 'European pattern' tents were obtainable, our C.O. was told to obtain reeds and reed mats locally and build huts of the Arab pattern. I had got an insight into the construction of the Arab hut just before, as we had been at work at road-making and I had had to pull down two or three. Their construction is as follows: Two rows of holes are dug, the rows some 10 to 12 ft. apart, and the holes spaced at about 5 ft. centers; in each hole a bundle of reeds is planted and the earth rammed home around them. The tops of the bundles are then drawn inwards till they overlap the tops of the bundles in the row opposite to them, when they are lashed together. The result is a series of arch-shaped reed principals of 10 to 12-ft. span and 5-ft. centers. On these principals are lashed purlins made of small bundles of reeds, and over this framework is fixed the 'skin,' consisting of either reed matting or of a row of reeds with their bases buried in the ground in the same way as the principals.

"I have not had the opportunity since seeing these huts to study any photos or any drawings of it, but it seems to me that the great arch of Ctesiphon is clearly a copy in stone of the indigenous style of reed architecture. Further, the shape naturally taken by these reed arched principals is not a half-circle, but a semi-ellipse; and, if my memory of pictures serves me, that is the shape of the great arch of Ctesiphon.

"The dimensions I have given are those of the ordinary huts in the Arab villages in the Tigris and Euphrates marshes, and are the average sizes obtainable with simple bundles of reeds. In some of the villages, however, I have seen some large halls of some 20-ft. span, with principals made up of several lengths of reeds, and our troops when building huts make them of 15 to 18-ft. span.

"In this way we built huts for all the British officers, of 10 ft. by 15 ft. and about 6 ft. to the crown of the arches. This height most of us increased by digging down one or two feet. I put two layers of matting on top, but in the heat of the day we had to wear topees inside our huts, though I may say they were more sunproof than the Arab's camel-hair tents, inside which I have been able to see my shadow quite distinctly."

The R. I. B. A. Obiter Dicta on Architectural Education

The following interesting paragraphs are extracted from a report published in the May issue of the *Journal of the Royal Institute of British Architects* of the recently held Conference on Architectural Education:

Composition a Constant

The Americans, in their adherence to the policy of studying precedent for internal and external character, have demonstrated two things—the first being that the underlying system of composition, at all periods, has never varied; and the second, the immediate necessity for augmenting the local Colonial tradition by drawing upon historical models. The Americans on this account are not plagiarists; they are scientists, with all the system of the Germans, but free from the doctrine of the Pikelhauben. —*Mr. A. E. Richardson.*

The Indescribable Something

The possession of the divine afflatus, or inflatus, or inspiration, or whatever it is, is the indescribable something which knits us together. It is that which filled the soul of the youngster with enthusiasm for the work of Norman Shaw: we knew nothing about his construction, or the masterly way in which he handled his clients, but we were charmed by the inexpressible art of his designs. And it is the same always; it was also the same with Street.—*Professor Beresford Pite.*

The Essential Thing to Teach

Others can build, but the only person who can design is the architect. He arranges structures to serve their purpose and to express ideas; if he does not do it, no one else will. This seems to be the one thing that will justify his existence in the future, and therefore the essential thing to teach.—*Mr. A. R. Jemmett.*

Architectural Department, Syracuse University

The Architectural Department of the College of Fine-Arts, Syracuse University, owing to its rapid advancement, has outgrown the quarters formerly occupied and will, on the opening of the new year, be housed on the top floor of the new Slocum Memorial College of Architecture.

Mobilization Camps

Congress appropriated $77,000,000 for mobilization camp construction. At first thirty-two cantonments were contemplated. Construction will be largely in the form of wooden barracks. The division of cost in the construction of these camps as originally estimated was as follows: Temporary buildings to shelter troops, horses and supplies, $40,500,000; temporary hospitals, $2,125,000; water and sewer systems, $2,150,000; electrical lighting, $605,000; roads and drainage, $5,040,000; target ranges, $2,015,000; refrigerators, $270,000.

Rhode Island Chapter, A. I. A.

Five members of the Rhode Island Chapter of the A. I. A. have joined the Rhode Island Citizen Constabulary.

Cleveland Chapter, A. I. A.

Officers for the ensuing year, elected by Cleveland Chapter, A. I. A., are as follows: Charles S. Schneider elected president; Herbert S. Briggs, vice-president, and Harry E. Weeks, secretary-treasurer.

Personal

William H. Schuchardt and Walter W. Judell, architects of the firm of Schuchardt & Judell, Milwaukee, Wis., announce the removal of their offices to 508-510 First National Bank Building, that city.

Book Note

INTERIOR WIRING AND SYSTEMS FOR ELECTRIC LIGHT AND POWER SERVICE. By Arthur L. Cook. Full flexible leather, 416 pp., size 4½ x 7. Price $2.00 net. New York, John Wiley & Sons, Inc.; London, Chapman & Hall, Ltd.

While this book has, primarily, been prepared for electrical workers, it contains in a compact and easily accessible form a large amount of material on electrical installation that will be valuable to architects and those who write specifications.

It is divided into three sections or parts, treating respectively of electric lighting systems, electric power systems and interior wiring.

An appendix contains 47 tables of data, performance of various types of lamps, power requirements, dimensions and the standardization of various accessories and factors in electrical illumination.

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Industrial Information

School Signaling Appliances

W. R. Ostrander & Co., 371 Broadway, New York City, have issued a new booklet describing and illustrating their strap key board systems of signaling and accessories for schools. Their Type B system is the standard adopted by the New York City Board of Education, and is worthy of investigation by architects interested in school planning.

The Hubbellite

With the expressed belief that "nothing lubricates the wheels of business like a little oil of friendship," Harvey Hubbell, Inc., of Bridgeport, Conn., manufacturers of electrical appliances, publish a house organ containing interesting talks on merchandising in general and the advantages of handling Hubbell electrical fixtures in particular. The booklet is published frequently, and the name of an inquirer will be placed upon the mailing list upon request.

Winter Construction

The story of the construction of a five-story building at Bridgeport, Conn., in the dead of winter, begun Jan. 12 and ready for occupancy on May 31st, is published in Bulletin No. 19 of the Turner Construction Company, 11 Broadway, New York, builders of concrete construction. The booklet tells of troubles encountered with freight embargoes, excessively bad weather and changes in the plans, all of which were overcome. Other winter jobs are described in less detail, with illustrations showing buildings completed or in process of construction.

California Redwood

Every architect undoubtedly knows the possibilities of California redwood for both interior and exterior purposes, but it is quite probable that the full extent of its adaptability for a thousand uses and effects will not be realized until an inspection has been made of a splendid publication on the subject issued by the California Redwood Association, San Francisco. Numerous colored plates serve to show the many beautiful grains and finishes that may be obtained from this wood, and the story of its advantages in dimension for paneling, "easy working" qualities and other features is illustrated strikingly. The association maintains a service bureau for the benefit of architects and others who would learn more of the details of the possibilities of redwood for specific purposes. Address the service bureau of the association, San Francisco, Cal.

"Flexsteel" Products

The National Metal Molding Co. of Pittsburgh, manufacturers of electrical conduits and fittings, have issued Bulletins Nos. 201 and 400, descriptive of their Flexsteel armored conductors, conduits and fittings and stamped steel fixture studs. Each bulletin is bound in a correspondence folder, indexed for filing by subject or alphabetically, in accordance with the standard plan the company has adopted for its bulletins. The two publications above mentioned follow Bulletins Nos. 50, 151 and 350, covering rigid conduits, non-metallic flexible conduits and locknuts and bushings respectively. Announcement is made that other similar bulletins are forthcoming to replace the looseleaf catalog formerly issued by this company.

Life Out of Doors

To-day, when the element of outdoor living is evident in almost every home, from the sun-porch or the pergola of the man of moderate means to the extensive and carefully planned gardens of the more fortunate citizen, the design of outdoor furnishings is an important question. The Mathews Manufacturing Company, 911 Williamson Building, Cleveland, Ohio, designers and manufacturers of garden furniture, have a catalog for distribution, containing seventy-four pages of illustrations and price lists on arbors, pergolas, gateways, trellises, fences, summer houses and garden furniture, from the plainest to the most elaborate. This is a booklet entitled "Garden Craft," which has been carefully prepared to be not only useful but interesting.

"De Luxe Heating"

Under the above title the General Fire Extinguisher Company of Providence, R. I., have prepared a pamphlet on their Rector System of gas heating, which details features of construction and heat control. Points cited for its favor are economy as against coal heating, freedom from dust or odor nuisance, simplicity of operation and control and practicability as a ventilating agent. The pamphlet will be mailed upon request.